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MR2723-166

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7-15-02 TCIN THE TITLE:

Please delete the Title of the Invention, Page 1, Line 1, in its entirety, and insert therefor the new Title of the Invention --DIGITAL FM DEMODULATOR WITH REDUCED QUANTIZATION NOISE--.

IN THE ABSTRACT:

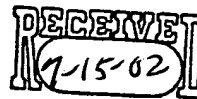
Please delete in its entirety the Abstract of the Disclosure, unnumbered Page 8 in the original Application, as originally filed, and insert therefor the following Substitute Abstract of the Disclosure:

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MR2723-166

--ABSTRACT OF THE DISCLOSURE

Sub B2

A digital FM demodulator utilizes delay lines as the timing reference and incorporates the concept of delta-sigma analog-to-digital conversion to implement the function of time-to-digital conversion. The FM demodulator is constructed from delay lines, a multiplexer, a phase detector, a charge pump circuit, a quantizer and a digital integrator. The modulated signal on an intermediate frequency carrier passes through the delay lines and is then phase-compared with the original modulation signal. The comparison produces a pulse which is converted into a voltage and stored in a capacitor by way of the charge pump circuit. The voltage having been accumulated and quantized, a new delayed output signal is acquired to compare its phase with the input signal. Meanwhile, the phase difference between input signal and delayed signal is used to select a delay for the delayed signal for the next cycle. The phase difference is continuously evaluated and adjusted to produce zero phase difference. The digital modulation signal is collected at the system output.--